

We Claim:

1. An apparatus through which a substrate is transferred between a first chamber and a second chamber, wherein said first chamber is maintained at a high temperature relative to a temperature maintained within said second chamber, said second chamber including a port; said apparatus comprising:

a passageway for receiving said substrate; and

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a thermally isolating interface that reduces heat transfer from said first chamber to said second chamber, said thermally isolating interface allowing for transfer of said substrate between said apparatus and said second chamber, said thermally isolating interface having a face with a border disposed on said face, the border defining a hole in said thermally isolating interface having dimensions such that said substrate is transferrable through said thermally isolating interface.

2. The apparatus of claim 1 wherein said first chamber is a heat chamber or a high temperature processing chamber and said second chamber is a transfer chamber.

3. The apparatus of claim 1 wherein said thermally isolating interface is composed of a material having a thermal conductivity coefficient less than that of aluminum.

4. The apparatus of claim 3 wherein said thermally isolating interface is composed of a material having a thermal conductivity coefficient of less than 1536 Btu inch/(hr)(ft²)(°F).

5. The apparatus of claim 4 wherein said thermally isolating interface is made of stainless steel.

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6. The apparatus of claim 4 wherein said thermally isolating interface is composed of a stainless steel having a thermal conductivity coefficient of about 106 Btu inch/(hr)(ft²)(°F).

7. The apparatus of claim 1, wherein said face includes a recess such that, when said face abuts said port, a thermally isolating volume is defined within said recess.

8. The apparatus of claim 7 wherein said thermally isolated volume is occupied by a composition having a thermal conductivity coefficient of less than 1200 Btu inch/(hr)(ft²)(°F).
9. The apparatus of claim 8 wherein said composition is air or an insulating material.
10. The apparatus of claim 7 wherein said recess is beveled.
11. The apparatus of claim 7 wherein a cross section of said recess is defined by a shape selected from the group consisting of a sawtooth pattern, a repeating pattern, a curve, and a polynomial equation.
12. The apparatus of claim 1 wherein said high temperature is in a range between about 250°C to about 625°C.
13. The apparatus of claim 1 wherein said passageway further comprises a heating element for maintaining said apparatus at a temperature that is proximate to said a high temperature.
14. The apparatus of claim 13 wherein said heating element comprises a heater in a metal shape.
15. The apparatus of claim 13 wherein said heating element is a coil wrapped about a ceramic base.
16. The apparatus of claim 13 wherein said passageway further comprises a heat distribution mechanism for distributing heat generated by said heating element.
17. The apparatus of claim 13 wherein said heat distribution mechanism is a reflective surface.

18. The apparatus of claim 17 wherein said heat distribution mechanism is a parabolic mirror.

19. The apparatus of claim 1 wherein said substrate is a semiconductor substrate or a glass substrate.

20. An apparatus through which a substrate is transferred between a first chamber and a second chamber, wherein said first chamber is maintained at a high temperature relative to a temperature maintained in said second chamber, said second chamber including a port; said apparatus comprising:

a passageway for receiving said substrate; and

a stainless steel interface that reduces heat transfer from said first chamber to said second chamber, said stainless steel interface allowing for transfer of said substrate between said apparatus and said second chamber, said stainless steel interface having a face with a border disposed on said face, the border defining a hole in said stainless steel interface having dimensions such that said substrate is transferrable through said stainless steel interface.

21. An apparatus through which a substrate is transferred between a first chamber and a second chamber, wherein said first chamber is maintained at a high temperature relative to an ambient temperature of said second chamber, said second chamber including a port; said apparatus comprising:

a passageway for receiving said substrate, said passageway including a heating element for maintaining said apparatus at a temperature that is proximate to said high temperature; and

an interface that reduces heat transfer from said first chamber to said second chamber, said interface allowing for transfer of said substrate between said apparatus and said second chamber, said interface having a face with a border disposed on said face, the border defining a hole in said interface having dimensions such that said substrate is transferrable through said interface.